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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,912	04/13/2000	Brian Mitchell Bass	RAL9-00-0017	7377
25299	7590	04/07/2004,	EXAMINER	
IBM CORPORATION PO BOX 12195 DEPT 9CCA, BLDG 002 RESEARCH TRIANGLE PARK, NC 27709			PHUNKULH. BOB A	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 04/07/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/548,912

Applicant(s)

BASS ET AL.

Examiner

Bob A. Phunkulh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

This communication is in response to applicant's 01/14/2004 amendment/responses in the application of **Bass et al.** for "**Method and System for Network Processor Scheduling Outputs Using Calendars**" filed 04/13/2000. The amendments/response to the claims have been entered. Claim 1 has been canceled. Claims 4-18 have been added. Claims 2-18 are now pending.

Claim Objections

Claim 4 is objected to because of the following informalities: please correct the subject matter "non-time-based calendar" to --one time-based calendar--. Appropriate correction is required.

Claim 10 is objected to because of the following informalities: the claim depends on cancelled claim. For examination, the claim is treated as the dependent of claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 5-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter "*a processing unit*" in claim ⁵4, and the claimed subject matter "*a back pressure controller*" in claim 7 in newly submitted claims are not supported by the original specification.

Claims 11-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matters "*each position represents a predefined unit of bandwidth and associated with stored information including information pointers pointing to information sources*" and "*a controller responsive to signals from a first position whereat the current pointer is aligned to identify a second position whereat an information pointer is placed for future serving after being detected from the first position*" in newly submitted claims are not supported by the original specification.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matters "*calculating a distance based on queue weight assigned to the queue and number of bytes transmitted*" in newly submitted claim is not supported by the original specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4, 10, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hughes et al. (US 5,835,494), hereinafter Hughes.

Regarding claim 4, Hughes discloses an apparatus for routing packets in a communications network comprising:

a plurality of queues in which information unit ready for transmission is being stored (*multiple service queues*, **col. 9 line 49 to col. 10 line 2**);

at least one time-based calendar being operable to select a queue from which a packet is to be transmitted in order to sustain a predefined bandwidth (*higher granularity calendars*, **see figures 1 and 2; col. 3 lines 1-8; and col. 6 line 52-67**);

at least one time independent calendar having spaced slots whereat queue pointers identifying queues containing information units to be transmitted are being

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stored (*lower granularity calendars, see figures 1 and 2; col. 3 line 1-8; and col. 6 lines 52-67*);

a current pointer (*the head pointer of the calendar entry, see figure 4 step 402*), associated with the non-time-based calendar, advancing at predefined time interval to select a slot whereat a queue being identified by one of said queue pointers is selected and an information unit is transmitted from the queue to an output destination (*see col. 10 line 65 to col. 11 line 24*).

Regarding claim 10, the apparatus comprising a common set of queues being serviced by the at least one time-based calendar and the at least one time independent calendar to provide best effort bandwidth and minimum bandwidth scheduling (service queue 122, *see figure 2 and col. 8 line 31-57*).

Regarding claim 17, Hughes discloses a method to route information units in a communications network comprising:

providing at least one calendar partitioned into a plurality of locations wherein each location represents a predefined unit of bandwidth and adapted to store pointers identifying queues with information units ready for transmission (*higher granularity calendars, and lower granularity calendars, where each having a plurality of slots and pointers, see figure 2 and col. 3 lines 18; and col. 6 lines 30-67*);

selecting one of the locations by advancing a current pointer (*a pointer 210 or 212*) relative to the calendar at predefined time intervals (*see col. 7 lines 50-65*);

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examining the one of the locations;

transmitting an information unit from a queue having a pointer at said one of the locations to the network (**see col. 7 line 1-5**);

detaching the pointer from its current location (*the pointer 210 or 212 is detach from its current location by increment, see col. 7 lines 66 to col. 8 line 26*) ; and attaching said pointer to another location based upon an algorithm (*the pointer 210 or 212 is attach to another location based on increment, see col. 7 line 66 to col. 8 line 26*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallmeier (US 6,031,822) in view of Ohba (US 6,101,193).

Regarding claim 2, Wellmeier discloses a method of selecting during any processing cycle one processed information unit from a plurality of information units ready at that time for transmission from a network processor toward a data transmission network, the method comprising:

receiving priority information about each of the information units ready for processing (**see col. 2 lines 31-38**);

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placing each information unit ready for transmission into one of several prioritized calendars based on the priority information associated with each processing unit, one of the calendars being time-based and an other one of the calendars being time independent (**col. 4 line 59 to col. 5 line 10, one of the scheduling means SB0....SB127 that serving the real-time priority ATM cell functions as the time-based calendar and the others as time-independent calendars**);

selecting one of the queues calendars to service at each time cycle based on a stored set of rules and selecting one of the information units from the selected queue calendar according to an algorithm, said selection from a weighted fair calendar including calculating a new position in the weighted fair calendar based the weighting factor for the information unit selected (**see col. 4 lines 7-14 and figure 2**); and sending the selected information unit from to the network.

Wallmeier fails to explicitly discloses calculating the new position in the weighted fair calendar based on the size of the packet.

Regarding claim 3, Wallmeier fails to discloses providing a back pressure indicator when the output for a given queue is not empty, preventing that calendar from being selected during the time cycle.

Ohba, on the other hand, discloses both using the weight and the length of the packet in a packet scheduling scheme (see figures steps S11-S13), discloses providing

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a back pressure indicator when the output for a given queue is not empty, preventing that calendar from being selected during the time cycle, see col. 3 lines 61 to col. 4 line 8, and figures 2-5 show a feedback line from output unit 30 to inputs of queues in scheduling unit 42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to includes the teaching of Ohba in the system taught by Wallmeier in order to provides a packet scheduling scheme which is capable of improving the fairness characteristic in a short time scale by suppressing the burstiness of traffic compared with the conventional WFQ algorithm.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314, (for formal communications; please mark "EXPEDITED
PROCEDURE")

Or:

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

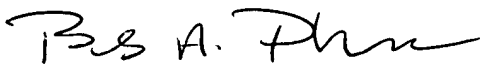
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(703) 308-8251**. The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Douglas W. Olms**, can be reach on **(703) 305-4703**. The fax phone number for this group is **(703) 872-9314**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh



April 2, 2004

T.C. 2600

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